

polycarbonate

technical information

September 2011

SEAT INSERTS AND UMBRELLA PANELS

Landscape Forms' seat inserts and umbrella panels are made from high-performance colored premium quality polycarbonate.

FINISH AND COLORS

All surfaces are protected with an abrasion resistant coating that is proven to withstand long term effects of UV exposure. The coating system is engineered to produce a translucent effect.

IMPACT RESISTANCE

Polycarbonate is amorphous meaning it lacks a distinct crystalline structure which is shapeless. This property gives polycarbonate its exceptional mechanical properties, impact resistance, toughness and dimensional stability. Polycarbonate holds up so well under impact not because it is hard and unyielding, but because it is flexible and gives slightly under pressure without breaking. Polycarbonate has an excellent memory so it returns to its original shape.

UL FLAMABILITY RATING

Horizontal Burn Classification UL94 H-B Rating. Vertical Burn Classification UL9034 V-0 and V-2 Rating

MAINTENANCE

Landscape Forms' Polycarbonate panels may be cleaned by gently washing with mild detergent in a lukewarm water solution using a soft cotton cloth. Rinse well with clean water and wipe dry with a soft cotton cloth.

SAMPLES

To receive a sample, contact the Landscape Forms Sales/Service team at 800.521.2546.

MECHANICAL PROPERTIES:

Property	Test Method	Units	Value
PHYSICAL			
Specific Gravity	ASTM D792		1.20
Refractive Index @ 77 °F	ASTM D542A		1.586
Light Transmission (Average), 1/8" Disk	ASTM D1003	%	88
Rockwell Hardness	ASTM D785		M70
Abrasion Resistance, Taber Abrader, CS-17 Wheel	ASTM D1044	mg/1,000 cycles	10
Water Absorption, Equilibrium, 24 hrs @ 73 °F	ASTM D570	%	0.15
@ 212 °F			0.35
@ 212 °F			0.58
MECHANICAL			
Tensile Strength	ASTM D638	psi	
At Yield			9,000
Ultimate			9,500
Tensile Modulus	ASTM D638	psi	345,000
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	345,000
Flexural Endurance @ 1,800 cycles/min, 73 °F, 50% RH	ASTM D671	psi	1,000
Compressive Strength	ASTM D695	psi	12,500
Compressive Modulus	ASTM D695	psi	345,000
Elongation	ASTM D638	%	110
Poisson's Ratio			0.37
Izod Impact Strength	ASTM D256A	ft-lbs/in	
Notched @ 1/8"			12 -to- 16
Unnotched @ 1/8"			60 (no failure)
Tensile Impact Strength, S-Type Specimen			225 -to- 300
Shear Strength			
At Yield			6,000
Ultimate			10,000
Shear Modulus	ASTM D732	psi	114,000
Deformation Under Load @ 4,000 psi	ASTM D621	%	
@ 73 °F			0.2
@ 158 °F			0.3

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THERMAL			
Coefficient of Thermal Expansion	ASTM D696	ln/in/°F	3.75 x 10 ⁻⁵
Coefficient of Thermal Conductivity	ASTM C177	Btu.in/hr.ft ² .°F	1.35
Specific Heat @ 40°C		cal/gm/°C	0.30
Heat Deflection Temperature	ASTM D648	°F	
@ 264 psi			270
@ 66 psi			280
Brittle Temperature	ASTM D746	°F	-211
ELECTRICAL			
Dielectric Constant	ASTM D150		
At 10 Hz			2.96
At 60 Hz			3.17
Volume Resistivity	ASTM D257	ohm-cm	8.2 x 10 ¹⁶
Power Factor	ASTM D150		0.0009
@ 60 Hz			0.01
@ 1,000,000 Hz	ASTM D495	sec	
Arc Resistance			
Stainless Steel Strip Electrodes			10 -to- 11
Tungsten Electrodes			120
FLAMMABILITY			
Horizontal Burn (Flame Spread) AEB	ASTM D635	in	<1